HIV Care & PMTCT in Resource-Limited Settings

Monthly Intelligence Report
2009, Vol 5, Issue 11

Back Issues on Line

prepared by the Bordeaux Working Group

Members: Elise Arrivé, Renaud Becquet, Mathias Bruyand, François Dabis (Chair), Antoine Jaquet, Valériane Leroy, Charlotte Lewden, Evelyne Mouillet (Coordinator), Joanna Orne-Gliemann (Coordinator), Freddy Perez, Hapsatou Touré.

Number of citations selected for this issue: 22

Citation format (by alphabetical order of the authors): Author(s). Title. Source. Abstr. (Authors' text) or Introduction (Authors' text) or Selection (Selected sections of the paper) or Notes or Abstr. Edited (Written by the Bordeaux Working Group). Author Address, if available, Free Full Text, if available

**Abstr.** Background: Lower-income countries face severe health worker shortages. Recent evidence suggests that this problem can be mitigated by task-shifting—delegation of aspects of health care to less specialized health workers. We estimated the potential impact of task-shifting on costs of antiretroviral therapy (ART) and physician supply in Uganda. The study was performed at the Infectious Diseases Institute (IDI) clinic, a large urban HIV clinic. Methods: We built an aggregate cost-minimization model from societal and Ministry of Health (MOH) perspectives. We compared physician-intensive follow-up (PF), the standard of care, with two methods of task-shifting: nurse-intensive follow-up (NF) and pharmacy-worker intensive follow-up (PWF). We estimated personnel and patient time use using a time-motion survey. We obtained unit costs from IDI and the literature. We estimated physician personnel impact by calculating full time equivalent (FTE) physicians saved. We made national projections for Uganda. Results: Annual mean costs of follow-up per patient were $59.88 (societal) and $31.68 (medical) for PF, $44.58 (societal) and $24.58 (medical) for NF and $18.66 (societal) and $10.5 (medical) for PWF. Annual national societal ART follow-up expenditure was $5.92 million using PF, $4.41 million using NF and $1.85 million using PWF, potentially saving $1.51 million annually by using NF and $4.07 million annually by using PWF instead of PF. Annual national MOH expenditure was $3.14 million for PF, $2.43 million for NF and $1.04 for PWF, potentially saving $0.70 million by using NF and $2.10 million by using PWF instead of PF. Projected national physician personnel needs were 108 FTE doctors to implement PF and 18 FTE doctors to implement NF or PWF. Task-shifting from PF to NF or PWF would potentially save 90 FTE physicians, 4.1% of the national physician workforce or 0.3 FTE physicians per 100,000 population. Conclusion: Task-shifting results in substantial cost and physician personnel savings in ART follow-up in Uganda and can contribute to mitigating the health worker crisis.

**Address:** BABIGUMIRA, JB, UNIV WASHINGTON, SCH PHARM, PHARMACEUT OUTCOMES RES & POLICY PROGRAM, SEATTLE, WA 98195 USA. babijo@u.washington.edu


**Abstr. Edited.** Objective: To assess the relationship between parental HIV/AIDS and psychosocial adjustment of children in two rural counties in central China. Methods: Participants included 296 double AIDS orphans (children who had lost both their parents to AIDS), 459 single orphans (children who had lost one parent to AIDS), 466 vulnerable children who lived with HIV-infected parents, and 404 comparison children who did not experience HIV/AIDS-related illness and death in their families. Children 6–18 years of age were eligible to participate in the study. The measures included socioeconomic status (SES), depressive symptoms, loneliness, self-esteem, future expectations, hopefulness about the future, and perceived control over the future. First, analysis of variance (ANOVA) was employed to compare scores of the psychosocial scales between single orphans and double orphans. Secondly, multivariate analyses using general linear model (GLM) procedure were performed to test the main effects of the children groups and of the care arrangements on psychosocial adjustment. Results: fifty-one percents of the 1625 children included in this study were boys. The mean age was 12.85 years (SD=2.21). Two-thirds of the children in the sample considered themselves as being “very good” or “good” in health. Compared with comparison children, AIDS orphans or vulnerable children scored significantly higher on depression F[2,1576]=39.12, p<.0001 and loneliness F[2,1576]=48.23, p<.0001, and scored significantly lower on self-esteem (F[2,1576]=20.22, p<.0001), positive future expectations (F[2,1576]=3.26, p<.05), hopefulness about future (F[2, 1576]=15.33, p<.0001), and perceived control over future (F[2, 1576]=9.63, p<.0001). While AIDS orphans reported higher scores than vulnerable children on depression, vulnerable children reported poorer psychosocial adjustment than AIDS orphans in loneliness and self-esteem. Among double orphans, care arrangement (i.e., orphanage, kinship care, group home) was significantly associated with depression (F[2,285]=5.99, p<.01), loneliness (F[2,285]=3.24, p<.05), self-esteem (F[2,285]=15.36, p<.0001), future expectations (F[2,285]=3.33, p<.05), hopefulness about future (F[2,285]=4.41, p<.05), and perceived control over the future (F[2,285]=10.89, p<.0001). In the GLM analysis among the entire sample, children’s group membership showed multivariate significance (F[12,3144]=15.32, p<.0001) and univariate significance for all psychosocial measures. Children
older in age reported lower loneliness, higher self-esteem, positive future expectation, higher hopefulness, and higher perceived control over the future. Family SES was a significant covariate in only the multivariate test (F[6,1571]=3.10, p<.01). AIDS orphans and vulnerable children consistently demonstrated poorer psychosocial adjustment than comparison children in the same community. The level of psychosocial adjustment was similar between single orphans and double orphans, but differed by care arrangement among double orphans.

Conclusion: The findings underscore the urgency and importance of culturally and developmentally appropriate intervention efforts targeting psychosocial problems among children affected by AIDS and call for more exploration of risk and resilience factors, both individual and contextual, affecting the psychosocial wellbeing of these children.

Address: LI, XM, WAYNE STATE UNIV, SCH MED, CARMAN & ANN ADAMS DEPT PEDIAT PREVENT RES CTR, 4201 ST ANTOINE ST, UHC 6-D, DETROIT, MI 48201 USA. xiaoli@med.wayne.edu


Abstr. Objectives To evaluate the virological response and to describe the resistance profiles in the case of failure after 6 months of first-line highly active antiretroviral therapy (HAART) in HIV-1-infected children living in resource-limited settings. Patients and methods Ninety-seven HIV-1-infected children who started two nucleoside reverse transcriptase inhibitors (NRTIs) and one non-nucleoside reverse transcriptase inhibitor (NNRTI) (mainly zidovudine/lamivudine/nevirapine) in Mali were prospectively studied. Virological failure (VF) was defined as loss to follow-up, death or HIV-1 RNA viral load (VL) of >400 copies/mL at 6 months. When VL was >50 copies/mL, a genotypic resistance test was performed. Results Among the 97 children, median age at antiretroviral initiation was 31 months and the majority were in WHO clinical (77.3%) and immunological (70.1%) stage III or IV. At month 6, 44% of children had VL > 400 copies/mL (61% VF). Among the children with detectable VL, 30/37 genotypic resistance tests were available, 8 with wild-type viruses and 22 with resistance mutations (73%): 19 M184V/I, 21 NNRTI mutations and only 3 thymidine analogue mutations (TAMs) (K70R, D67N and L210W in three distinct viruses). At failure, 6/8 children with wild-type viruses had a VL of <1000 copies/mL whereas 21/22 with resistant viruses had a VL of >1000 copies/mL. Conclusions Under NNRTI-based regimens, early detection of VF could allow the reinforcement of adherence when VL was <1000 copies/mL, because in most of these cases no resistance mutations were detected, or a change to a protease inhibitor-based regimen if VL was >1000 copies/mL. The low frequency of TAMs suggests that most NRTIs can be used in a second-line regimen after early failure.

Address: SOLTHIS, Bamako, Mali


Abstr. OBJECTIVE: Clinical outcomes of HIV-infected children on antiretroviral treatment (ART) in a decentralized, nurse/counsellor-led programme. DESIGN: Clinical cohort. SETTING: KwaZulu-Natal, South Africa. Patients: HIV-infected children aged <=15 years on ART, June 2004-2008 MAIN OUTCOME MEASURES: Survival according to baseline characteristics including age, WHO clinical stage, haemoglobin, and CD4% was assessed in Kaplan-Meier analyses; hazard ratios for mortality estimated using Cox proportional hazards regression. Changes in laboratory parameters and weight-for-age z-scores (WAZ) after 6-12 months on treatment. RESULTS: 477 HIV-infected children initiated ART: at a median age of 74 months (range 4-180); median CD4 count (CD4%) 433 cells/mm3 (17%); and median HIV viral load log 4.2 copies/mL; 105 (22%) were on treatment for tuberculosis; and 317 (76.6%) were WHO Stage 3/4. There were significant increases after ART initiation in CD4% (17% vs. 22%; p<0.001), haemoglobin (9.9 vs. 11.7 g/L; p<0.001), and albumin (30 vs. 36 g/L; p<0.001). 32 (6.7%) children died over 732 child-years of follow-up (43.7 deaths per 1000 child-years; 95% CI, 32.7 - 58.2), 17 (53.1%) within 90 days of treatment initiation; median age of death 84 (IQR 10-181) months. Children with baseline haemoglobin <=8g/L were more likely to die (adjusted HR 4.5; 95% CI 1.6 - 12.3), as were those aged <18 months compared to >60 months (adjusted HR 3.2; 95% CI 1.2 - 9.1). CONCLUSIONS: Good clinical outcomes in HIV-infected children on ART are possible in a rural, decentralized service. Few young children are on ART, highlighting the urgent need to identify HIV-exposed infants.

Address: Africa Centre for Health & Population Studies, University of KwaZulu-Natal, South Africa
Abstr. Objective: The main aim of this study was to reduce breast-milk transmission of HIV-1 by treating HIV-1-infected women with highly active antiretroviral therapy (HAART) during breastfeeding. Methods: Mina. Plus was an open-label, nonrandomized, prospective cohort study of HIV-1-infected pregnant women in Dar es Salaam were treated with zidovudine (ZDV) + lamivudine (3TC) + nevirapine (NVP). NVP was later replaced by nelfinavir for mothers with CD4 cell counts >200 cells per microliter or with adverse reaction to NVP. HAART was initiated at 34 weeks of gestation. For women with symptomatic HIV infection or CD4 cell counts below 200 cells per microliter, HAART was started earlier if possible. Treatment of the mothers was stopped at 6 months except for those mothers who needed HAART for their own health. The infants received ZDV + 3TC for 1 week after birth. Mothers were advised to exclusively breastfeed and to wean abruptly between 5 and 6 months. Transmission of HIV-1 was analyzed using the Kaplan-Meier survival technique. Cox regression was used for comparison with the breastfeeding population of the Petra trial arm A. Results: There were 441 infants included in the analysis of HIV-1 transmission. The cumulative transmission of HIV-1 was 4.1% [95% confidence interval (CI): 2.2 to 6.0] at 6 weeks, 5.0% (95% CI: 2.9 to 7.1) at 6 months, and 6.0% (95% CI: 3.7 to 8.3) at 18 months after delivery. The cumulative risk of HIV transmission between 6 weeks and 6 months was 1.0% and between 6 months and 18 months 1.1%. The cumulative HIV infection or death rate was 8.6% (95% CI: 6.0 to 11.2) at 6 months and 13.6% (95% CI: 10.3 to 16.9) at 18 months after delivery. Viral load at enrollment and duration of HAART before delivery were significantly associated with transmission but CD4 cell count at enrollment was not. The median time of breastfeeding was 24 weeks. The transmission in the Mitra Plus study was about half of the transmission in the breastfeeding population in the Petra trial arm A at 6 months after delivery (adjusted relative hazard = 0.49, P < 0.001). The combined outcome HIV infection or death was significantly lower in the Mitra Plus study than in the breastfeeding population in the Petra trial arm A at 18 months (adjusted relative hazard = 0.61, P = 0.007). NVP-related mucocutaneous rash was demonstrated in 6.5% of 429 NVP-exposed women. The incidence of NVP-related grade 3 or 4 hepatotoxicity was low (0.5%). Conclusions: HAART given to HIV-infected mothers in late pregnancy and during breastfeeding resulted in a low postnatal HIV transmission similar to that previously demonstrated in the Mitra Study in Dar es Salaam using infant prophylaxis with 3TC. The extended maternal prophylaxis with HAART for prevention of mother-to-child transmission of HIV-1 for breastfeeding mothers who do not need HAART for their own health should be further evaluated and compared with the use of infant postnatal antiretroviral prophylaxis regarding safety and cost-effectiveness.

Address: BIBERFELD, G, SWEDISH INST INFECT DIS CONTROL, SMI, SE-17182 STOCKHOLM, SWEDEN. gunnel.biberfeld@smi.se


Abstr. Objective: To describe the safe substitution with zidovudine (AZT) among South Indian HIV-infected patients who were initiated with stavudine (d4T)-containing highly active antiretroviral therapy (HAART) due to anemia. Methods: Therapy-naive patients initiating HAART between January 2006 and December 2007 and who had had d4T substituted for AZT at a tertiary HIV referral center in India were analyzed. Results: Six hundred and nineteen patients initiated d4T-
containing HAART (median CD4 110 cells/μl; median hemoglobin 10.4 g/dl) during the study period. Subsequently half of these patients substituted d4T for AZT (median CD4 350 cells/μl; median hemoglobin 12.8 g/dl). After substituting with AZT, three patients (2.7%) who substituted after less than 6 months and one patient (0.6%) who substituted at between 6 and 12 months developed anemia. Patients who substituted after less than 6 months had significantly higher median CD4 cell counts at 1-month and 6-months of follow-up than patients who substituted at between 6 and 12 months (p < 0.05). Few patients (1.6%) experienced treatment failure; about a tenth of patients developed d4T-related toxicities. Conclusion: Few patients developed anemia (1.4%) within 6 months of substitution with AZT. In settings where tenofovir is either expensive or not available and where patients are anemic, initiating d4T followed by prompt substitution with AZT can be a safe and tolerable treatment option.

Address: KUMARASAMY, N, VOLUNTARY HLTH SERV, YRG CTR AIDS RES & EDUC, MADRAS 600113, TAMIL NADU, INDIA. kumarasamy@yrgcare.org


Abstr. Objective: Studies on long-term nonprogressors (LTNP) have been conducted in the USA and Europe. This study examined the frequency of LTNP and HIV controllers among 637 HIV-1 seroconverters in rural Uganda. Design and Methods: LTNP were defined as being infected for more than 7 years with a CD4(+) T-cell count above 600 cells per microliter, and HIV controllers as having undetectable viral loads on 3 separate occasions without antiretroviral treatment. HIV-1 viral load and subtype distribution between LTNP and non-LTNP populations were determined. Results: Of the HIV seroconverters, 9.1% (58/637) were LTNP and 1.4% (9/637) were HIV controllers. LTNP had a significantly lower viral load at set point than non-LTNP participants (P < 0.001). The Kaplan-Meier joint probability of surviving to 7 years with a CD4 count >600 was 19.2%. Individuals who survived 7 years had a significantly higher frequency of HIV-1 subtype A (P < 0.05), but seroconverters infected with HIV-1A did not have a significantly higher probability of becoming an LTNP. Conclusions: The frequency of LTNP appears to be relatively high in Uganda and it may be important to take this into account when designing studies of viral pathogenesis and performing HIV vaccine trials in sub-Saharan Africa.

Address: REDD, AD, JOHNS HOPKINS UNIV, IMMUNOREGULAT LAB, NIAID, NIH, SCH MED, RANGOS BLDG ROOM 527,855 N WOLFE ST, BALTIMORE, MD 21215 USA. aredd2@jhmi.edu


Abstr. Background. Estimates of the decrease in CD4(+) cell counts in untreated patients with human immunodeficiency virus (HIV) infection are important for patient care and public health. We analyzed CD4(+) cell count decreases in the Cape Town AIDS Cohort and the Swiss HIV Cohort Study. Methods. We used mixed-effects models and joint models that allowed for the correlation between CD4(+) cell count decreases and survival and stratified analyses by the initial cell count (50-199, 200-349, 350-499, and 500 750 cells/μL). Results are presented as the mean decrease in CD4(+) cell count with 95% confidence intervals (CIs) during the first year after the initial CD4(+) cell count. Results. A total of 784 South African (629 nonwhite) and 2030 Swiss (218 nonwhite) patients with HIV infection contributed 13,388 CD4(+) cell counts. Decreases in CD4(+) cell count were steeper in white patients, patients with higher initial CD4(+) cell counts, and older patients. Decreases ranged from a mean of 38 cells/μL (95% CI, 24-54 cells/μL) in nonwhite patients from the Swiss HIV Cohort Study 15-39 years of age with an initial CD4(+) cell count of 200-349 cells/μL to a mean of 210 cells/μL (95% CI, 143-268 cells/μL) in white patients in the Cape Town AIDS Cohort ≥ 40 years of age with an initial CD4(+) cell count of 500-750 cells/μL. Conclusions. Among both patients from Switzerland and patients from South Africa, CD4(+) cell count decreases were greater in white patients with HIV infection than they were in nonwhite patients with HIV infection.

Address: MAY, M, UNIV BRISTOL, DEPT SOCIAL MED, BRISTOL BS8 2PS, AVON, ENGLAND. m.t.may@bristol.ac.uk

**Abstr.** Introduction: Access to antiretroviral treatment (ART) has expanded dramatically in resource-limited settings. Evaluating loss to follow-up from HIV testing through post-ART care can help identify obstacles to care. Methods: Routine data were analyzed for adults receiving services in 2 Public HIV care systems in central Mozambique. The proportion of people passing through the following steps was determined: (1) HIV testing, (2) enrollment at an ART clinic, (3) CD4 testing, (4) starting ART if eligible, and (5) adhering to ART. Results: During the 12-month study period (2004-2005), an estimated 23,430 adults were tested for HIV and 7005 (29.9%) were HIV positive. Only 3956 (56.5%) of those HIV positive enrolled at an ART clinic <= 30 days after testing. CD4 testing was obtained in 77.1% <= 30 days of enrollment. Of 1506 eligible for ART, 471 (31.3%) started ART <= 90 days after CD4 testing. 017382 with >= 180 days of potential follow-up time oil ART, 317 (83.0%) had pharmacy-based adherence rates >= 90%. Discussion: Substantial drop-offs were observed for each step between HIV testing and treatment but were highest for referral from HIV testing to treatment sites and for starting ART. Interventions are needed to improve follow-up and ensure that people benefit from available HIV services.

**Address:** MICEK, MA, UNIV WASHINGTON, DEPT GLOBAL HLTH, POB 354809, SEATTLE, WA USA. mmicek@u.washington.edu


**Abstr.** see above Kilewo paper.

**Address:** MOFENSON, LM, EUNICE KENNEDY SHRIVER NICHD, PEDIAT ADOLESCENT & MATERNAL AIDS BRANCH, CTR RES MOTHERS & CHILDREN, NIH, 6100 EXECUT BLVD,ROOM 4B11, ROCKVILLE, MD 20852 USA. lm65d@nih.gov


**Abstr.** Despite scale up of perinatal prevention of mother-to-child transmission (PMTCT) of HIV interventions, postnatal continuity of comprehensive HIV/AIDS care, for both the mother and baby, remains a challenge in developing countries. We determined adherence to the postnatal PMTCT program (PN-PMTCT) and the associated factors among mothers at a public urban hospital in Uganda. We interviewed HIV-positive postnatal mothers on discharge and we determined adherence to PN-PMTCT by the proportion of mothers that honored their return appointments by the end of eight weeks postpartum. We had focus group discussions to assess factors that influence adherence to PN-PMTCT. Of 289 mothers, only 110 (38%) adhered to PN-PMTCT. Previous attendance of a routine postnatal review and having access to a phone were significantly associated with adherence to PMTCT among mothers older than 25 years of age. Mothers' perceived benefits of the PN-PMTCT program, easy access to the program, and presence of social support from a spouse were important motivators for mothers to adhere to PN-PMTCT. Even with improved antenatal and intra-partum PMTCT services, only a third of the HIV-infected mothers adhered to the PN-PMTCT program. Mothers who previously attended a routine postnatal care were 3.6 fold more likely to adhere to PN-PMTCT. We recommend strategies to increase mothers' adherence to PN-PMTCT interventions in order to increase access to HIV/AIDS care for mothers and children in sub-Saharan Africa.

**Address:** NAKANJAKO, D, MAKERERE UNIV, DEPT MED, FAC MED, KAMPALA, UGANDA. drdamalie@yahoo.com

Abstr. To determine the relationship between nutritional status and nevirapine exposure by comparing the pharmacokinetics of nevirapine in HIV-infected children of different ages with and without malnutrition receiving divided tablets of Triomune(R)30 (stavudine + lamivudine + nevirapine) in accordance with Malawi National Guidelines. Children were recruited in weight-based dosage bands and nutritional status classified according to weight for height. Total and unbound plasma nevirapine concentrations were measured over a full dosing interval. Multivariate linear and logistic regression analyses were performed to determine the effects of malnutrition, age, dose and other factors on nevirapine exposure and likelihood of achieving therapeutic nevirapine trough concentrations. Forty-three children were recruited (37 included for analysis). Mild to moderate malnutrition was present in 12 (32%) children; 25 (68%) were of normal nutritional status. There was no effect of malnutrition on any measure of total drug exposure or on the unbound fraction of nevirapine. Nevirapine exposure was strongly related to dose administered ($P = 0.039$) and to age (for every yearly increase in age there was an similar to 88% increase in the odds of achieving a therapeutic nevirapine concentration; $P = 0.056$, 95% confidence interval 0.983-3.585). Use of divided adult Triomune(R)30 tablets in treating young children results in significant underdosing. No independent effect of malnutrition on total and unbound nevirapine exposures was observed. These data support the use of bespoke paediatric antiretroviral formulations.

Address: ELSE, L, UNIV LIVERPOOL, DEPT PHARMACOL & THERAPEUT, POB 147, LIVERPOOL L69 3BX, MERSEYSIDE, ENGLAND. l.j.else@liv.ac.uk


Abstr. Objective To better understand the enabling and challenging factors impacting on infant feeding practices in communities with a high HIV prevalence Design Qualitative study, with data collected through in-depth interviews and observations of mothers, in addition to discussions with health-service providers Setting Urban settlement in the province of KwaZulu-Natal. South Africa Subjects Mothers recruited from an HIV clinic and from within the community Results Emerging from discussions with mothers on the acceptability of alternative feeding methods were the challenges they encountered in feeding their infants Mothers readily identified feeding in the context of HIV infection as an issue of great concern, encompassing three central themes (i) stigma and disclosure of HIV, (ii) confusion and coercion, and (iii) diarrhoea, sickness and free formula it became evident that mothers rarely received quality infant feeding counselling and consequently mixed feeding, a widespread practice but one that is highly risky for HIV transmission, remained a common feeding practice. Exclusive breast-feeding (EBF) was best practised with support, following disclosure of HIV status Availability of free formula did not guarantee exclusive formula feeding but instead led to inappropriate feeding practices Conclusions In addition to providing accurate information, health-care workers must be empowered to counsel mothers effectively, addressing issues of disclosure and thereby facilitating mobilization of maternal support networks. These findings illustrate the challenges that exist in policy translation within the context of quality of training for health-care workers on optimizing maternal infant feeding practices, particularly in HIV-prevalent, resource-poor settings.

Address: GRAY-DONALD, K, MCGILL UNIV, SCH DIETET & HUMAN NUTR, 21,111 LAKESHORE RD, STE ANNE DE BELLEVUE, PQ H9X 3V9, CANADA


Abstr. An estimated 14 million women in sub-Saharan Africa are HIV infected and these women deserve access to evidence-based family planning services. Increasing contraceptive use in HIV-infected women can reduce the numbers of unintended pregnancies and thus reduce maternal death and vertical transmission of HIV. A delicate balance exists between risks associated with pregnancy and any theoretical risks of acquiring, transmitting or worsening HIV attributable to using a contraceptiive. This commentary reviews interactions between hormonal, intrauterine and barrier contraception in HIV-infected women, with a focus on sub-Saharan Africa. Unfortunately, the evidence on these interactions to guide family planning providers is limited and more research in this area is urgently needed.

Address: STUART, GS, UNIV N CAROLINA, DEPT OBSTET & GYNECOL, CHAPEL HILL, NC 27599 USA. gstuart@med.unc.edu

HIV Care&PMTCT 2009; 5 (11) 82
Abstr. Background. The association between postnatal human immunodeficiency virus type 1 (HIV-1) transmission and maternal highly active antiretroviral therapy (HAART) after infant extended antiretroviral prophylaxis was assessed. Methods. A follow-up study was conducted for the Post-Exposure Prophylaxis of Infants trial in Blantyre, Malawi (PEPI-Malawi). In PEPI-Malawi, breast-feeding infants of HIV-infected women were randomized at birth to receive a either control regimen (single-dose nevirapine plus 1 week of zidovudine); the control regimen plus nevirapine to age 14 weeks; or the control regimen plus nevirapine and zidovudine to age 14 weeks. Infant HIV infection, maternal CD4 cell count, and HAART use were determined. Maternal HAART use was categorized as HAART eligible but untreated (CD4 cell count < 250 cells/μL, no HAART received), HAART eligible and treated (CD4 cell count of < 250 cells/μL, HAART received), and HAART ineligible (CD4 cell count of >= 250 cells/μL). The incidence of HIV infection and the association between postnatal HIV transmission and maternal HAART were calculated among infants who were HIV negative at 14 weeks. Results. Of 2318 infants, 130 (5.6%) acquired HIV infection, and 310 mothers (13.4%) received HAART. The rates of HIV transmission (in cases per 100 person-years) were as follows: for the HAART-eligible/untreated category, 10.56 (95% confidence interval [CI], 7.91-13.82); for the HAART-eligible/treated category, 1.79 (95% CI, 0.58-4.18); and for the HAART-ineligible category, 3.66 (95% CI, 2.86-4.61). The HIV transmission rate ratio for the HAART-eligible/treated category versus the HAART-eligible/untreated category, adjusted for infant prophylaxis, was 0.18 (95% CI, 0.07-0.44). Conclusions. Postnatal HIV transmission continues after cessation of infant prophylaxis. HAART-eligible women should start treatment early for their own health and to reduce postnatal HIV transmission to their infants.

Address: Taha, TE, Johns Hopkins Bloomberg Sch Publ Hlth, Dept Epidemiol, 615 N Wolfe St, Baltimore, MD 21205 USA. ttaha@jhsph.edu

Free Full Text: http://www.journals.uchicago.edu/doi/pdf/10.1086/644598

Abstr. Male circumcision provides long-term indirect protection to women by reducing the risk of heterosexual men becoming infected with HIV. In this Review, we summarise the evidence for a direct effect of male circumcision on the risk of women becoming infected with HIV. We identified 19 epidemiological analyses, from 11 study populations, of the association of male circumcision and HIV risk in women. A random-effects meta-analysis of data from the one randomised controlled trial and six longitudinal analyses showed little evidence that male circumcision directly reduces risk of HIV in women (summary relative risk 0.80, 95% CI 0.53-1.36). Definitive data would come from a further randomised controlled trial of circumcision among men infected with HIV in serodiscordant heterosexual relationships, but this would involve enrolling about 10000 couples and is likely to be logistically unfeasible. As circumcision services for HIV prevention are scaled-up in high HIV prevalence settings, rapid integration with existing prevention strategies would maximise benefits for both men and women. Rigorous monitoring is essential to ensure that any adverse effects on women are detected and minimised.

Address: WEISS, HA, UNIV LONDON LONDON SCH HYG & TROP MED, DEPT EPIDEMIOL & POPULAT HLTH, KEPPLE ST, LONDON WC1E 7HT, ENGLAND. helen.weiss@lshtm.ac.uk


Abstr. Injection drug use has recently emerged in sub-Saharan Africa. The purpose of this study was to assess the factors associated with increased risk of testing HIV-positive in a sample of injection drug users (IDUs) in Dar es Salaam, Tanzania. Participants were recruited by a trained outreach worker or were referred by IDUs who had completed the study. Blood specimens and self-reported socioeconomic and behavioral data were collected from 315 male and 219 female IDUs. Data were analyzed using univariate odds ratios and multivariate logistic regression modeling. Forty-two percent of the sample tested HIV-positive. Several socioeconomic, injection, and sexual factors were found to be associated with increased odds of testing HIV-positive. Multivariate analysis showed that having had sex more than 81 times in past 30 days, earning less than 100,000 shillings (US$76) in the past month, residency in Dar es Salaam for less than 5 years, and injecting for 3 years were independently associated with the greatest risk of infection. The rate of HIV infection in this sample of IDUs was found to be very high, suggesting that injection drug use may be a factor in the continuing epidemic in sub-Saharan Africa. The factors associated with increased risk of HIV infection suggest further research is needed on the needle use and sexual networks of IDUs.

Address: WILLIAMS, ML, UNIV TEXAS SCH PUBL HLTH, CTR HLTH PROMOT & PREVENT RES, 7000 FANNIN ST,SUITE 2516, HOUSTON, TX 77030 USA. Mark.L.Williams@uth.tmc.edu

